SEQUENCE LISTING

<110> Cahoon, Rebecca E.
Miao, Guo-Hua
Herrman, Rafael
Rafalski, Antoni
McCutchen, Bill F.

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35 40 45

Ala Pro Glu Tyr Glu Glu Ala Ala Thr Thr Leu Lys Glu Lys Asn Ile
50 55 60

Lys Leu Ala Lys Ile Asp Cys Thr Glu Glu Ser Asp Leu Cys Lys Asp
65 70 75 80

Gln Gly Val Glu Gly Tyr Pro Thr Leu Lys Val Phe Arg Gly Leu Asp
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Asn Val Thr Pro Tyr Ser Gly Gln Arg Lys Ala Ala Gly Ile
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Gly Tyr Val Asp Gly Thr Leu Gln Pro Thr Val Lys Ser Glu Glu Ile
35 40 45

Pro Glu Lys Gln Asp Gly Pro Val Tyr Val Leu Val Gly Lys Asn Phe
50 55 60

30

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Glu Ser Ile Val Met Asp Glu Thr Lys Asp Val Leu Val Glu Phe Tyr
 65                  70                  75                  80

Ala Pro Trp Cys Gly His Cys Lys Thr Leu Ala Pro Lys Tyr Asp Ala
                85                  90                  95

Leu Gly Glu Ser Phe Lys Ser Asn Pro Asn Val Ile Ile Ala Lys Ile
            100                 105                 110

Asp Ala Thr Ala Asn Asp Thr Pro Val Asp Ile Gln Gly Phe Pro Thr
        115                 120                 125

Ile Ile Tyr Trp Pro Ala Asn Asn Lys Lys Asn Pro Ile Thr Tyr Glu
    130                 135                 140

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Phe Pro Arg Asp Gly Arg Val Ile Asp Leu Asp Asp Ser Asn Phe Glu
        35                  40                  45

Ala Ala Leu Gly Ala Ile Asp Phe Leu Phe Val Asp Phe Tyr Ala Pro
    50                  55                  60

Trp Cys Gly His Cys Lys Arg Leu Ala Pro Glu Leu Asp Glu Ala Ala
65                  70                  75                  80

Pro Val Leu Ser Gly Leu Ser Glu Pro Ile Val Val Ala Lys Val Asn
                85                  90                  95

Ala Asp Lys Tyr Arg Lys Leu Gly Ser Lys Tyr Gly Val Asp Gly Phe
            100                 105                 110

Pro Thr Leu Met Leu Phe Ile His Gly Val Pro Ile Glu Tyr Thr Gly
        115                 120                 125

Ser Arg Lys Ala Asp Gln Leu Val Arg Asn Leu Lys Lys Phe Val Ser
    130                 135                 140

Pro Asp Val Ser Ile Leu Glu Ser Asp Ser Ala Ile Lys Asn Phe Val
145                 150                 155                 160

Glu Asn Ala Gly Ile Ser Phe Pro Ile Phe Leu Gly Phe Gly Val Asn
                165                 170                 175

Asp Ser Leu Ile Ala Glu Tyr Gly Arg Lys Tyr Lys Lys Arg Ala Trp
            180                 185                 190

Phe Ala Val Ala Lys Asp Phe Ser Glu Asp Ile Met Val Ala Tyr Glu
        195                 200                 205

Phe Asp Lys Val Pro Ala Leu Val Ala Ile His Pro Lys Tyr Lys Glu
    210                 215                 220

Gln Ser Leu Phe Tyr Gly Pro Phe Glu Glu Asn Phe Leu Glu Asp Phe
225                 230                 235                 240

Val Arg Gln Ser Leu Leu Pro Leu Val Val Pro Ile Asn Thr Glu Thr
                245                 250                 255

Leu Lys Met Leu Asn Asp Asp Gln Arg Lys Val Val Leu Thr Ile Leu
            260                 265                 270

Glu Asp Asp Ser Asp Glu Asn Ser Thr Gln Leu Val Lys Ile Leu Arg
        275                 280                 285

Ser Ala Ala Asn Ala Asn Arg Asp Leu Val Phe Gly Tyr Val Gly Ile
    290                 295                 300

Lys Gln Trp Asp Gly Phe Val Glu Thr Phe Asp Val Ser Lys Ser Ser
305                 310                 315                 320
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32

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Gln Leu Pro Lys Leu Leu Val Trp Asp Arg Asp Glu Glu Tyr Glu Leu
                325                 330                 335

Val Asp Gly Ser Glu Arg Leu Glu Glu Gly Asp Gln Ala Ser Gln Ile
            340                 345                 350

Ser Gln Phe Leu Glu Gly Tyr Arg Ala Gly Arg Thr Thr Lys Lys Lys
        355                 360                 365

Ile Thr Gly Pro Ser Phe Met Gly Phe Leu Asn Ser Leu Val Ser Leu
    370                 375                 380

Asn Ser Leu Tyr Ile Leu Ile Phe Val Ile Ala Leu Leu Phe Val Met
385                 390                 395                 400

Val Tyr Phe Ala Gly Gln Asp Asp Thr Pro Gln Pro Arg Arg Ile His
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<213> Momordica charantia

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            20                  25                  30

Asp Phe Ser Asp Phe Glu Asp Ser Asp Ala Asp Arg Asp Glu Tyr Lys
        35                  40                  45

Ala Pro Glu Val Asp Glu Lys Asp Val Val Val Leu Lys Glu Gly Asn
    50                  55                  60

Phe Ser Asp Phe Val Glu Lys Asn Arg Phe Val Met Val Glu Phe Tyr
65                  70                  75                  80

Ala Pro Trp Cys Gly His Cys Gln Ala Leu Ala Pro Glu Tyr Ala Ala
                85                  90                  95

Ala Ala Thr Glu Leu Lys Gly Glu Asn Val Val Leu Ala Lys Val Asp
            100                 105                 110

Ala Thr Glu Glu Asn Glu Leu Ser Gln Lys Tyr Asp Val Gln Gly Phe
        115                 120                 125

Pro Thr Val Tyr Phe Phe Ala Asp Gly Val His Lys Ser Tyr Pro Gly
    130                 135                 140

Gln Arg Thr Lys Asp Ala Ile Val Thr Trp Ile Lys Lys Lys Ile Gly
145                 150                 155                 160

Pro Gly Ile Tyr Asn Ile Thr Ser Val Glu Asp Ala Glu Arg Ile Leu
                165                 170                 175

Thr Ser Glu Thr Lys Val Val Leu Gly Tyr Leu Asn Ser Leu Val Gly
            180                 185                 190

Pro Glu Ser Asn Glu Leu Ala Ala Ala Ser Arg Leu Glu Asp Asp Val
        195                 200                 205

Asn Phe Tyr Gln Thr Val Asp Pro Glu Val Ala Lys Leu Phe His Ile
    210                 215                 220

Glu Ala Ser Ala Lys Arg Pro Ala Leu Val Leu Leu Lys Lys Glu Ala
225                 230                 235                 240

Glu Lys Leu Asn Arg Phe Asp Gly Glu Phe Ser Lys Ser Ala Ile Ala
                245                 250                 255

Glu Phe Val Phe Ala Asn Lys Leu Pro Leu Val Thr Lys Phe Thr Arg
            260                 265                 270

Glu Ser Ala Pro Leu Ile Phe Glu Ser Ser Ile Lys Lys Gln Leu Ile
        275                 280                 285
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Leu Phe Ala Ile Ser Asn Asp Ser Glu Lys Leu Ile Pro Ile Phe Glu
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Glu Ser Ser Lys Ser Phe Lys Gly Lys Leu Ile Phe Val Tyr Val Glu
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Ile Asp Asn Glu Asp Val Gly Lys Pro Val Ser Glu Tyr Phe Gly Ile
                325                 330                 335

Ser Gly Asn Gly Pro Glu Val Leu Gly Tyr Thr Gly Asn Glu Asp Ser
            340                 345                 350

Lys Lys Phe Val Leu Ala Lys Glu Val Thr Leu Asp Asn Ile Lys Ala
        355                 360                 365

Phe Gly Glu Asn Phe Leu Glu Asp Lys Leu Lys Pro Phe Tyr Lys Ser
    370                 375                 380

Asp Pro Ile Pro Glu Thr Asn Asp Gly Asp Val Lys Val Val Val Gly
385                 390                 395                 400

Asp Asn Phe Asp Asn Ile Val Leu Asp Glu Ser Lys Asp Val Leu Leu
                405                 410                 415

Glu Ile Tyr Ala Pro Trp Cys Gly His Cys Gln Ala Leu Glu Pro Thr
            420                 425                 430

Tyr Asn Lys Leu Ala Lys His Leu Arg Gly Ile Asp Ser Leu Val Ile
        435                 440                 445

Ala Lys Met Asp Gly Thr Thr Asn Glu His Pro Arg Ala Lys Ser Asp
    450                 455                 460

Gly Phe Pro Thr Ile Leu Phe Phe Pro Ala Gly Asn Lys Ser Phe Asp
465                 470                 475                 480

Pro Ile Thr Val Asp Thr Asp Arg Thr Val Val Ala Leu Tyr Lys Phe
                485                 490                 495

Ile Lys Lys Asn Ala Ser Ile Pro Phe Lys Leu Gln Lys Pro Val Ser
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35

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Glu Glu Val Val Asp Asp Leu Gln Tyr Leu Ile Asp Asn Ser Asp Asp
35 40 45

Ile Pro Thr Asn Asp Pro Asp Gly Trp Pro Glu Gly Asp Tyr Asp Asp
50 55 60

Asp Asp Leu Leu Phe Gln Asp Gln Asp Gln Asp Leu Thr Gly His Gln
65 70 75 80

Pro Glu Ile Asp Glu Thr His Val Val Val Leu Ala Ala Ala Asn Phe
85 90 95

Ser Ser Phe Leu Ala Ser Ser His His Val Met Val Glu Phe Tyr Ala
100 105 110

Pro Trp Cys Gly His Cys Gln Glu Leu Ala Pro Gly Leu Ser Arg Arg
115 120 125

36

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Arg Ala His Leu Ala Gly Ser Thr Asn Gln Pro Arg Pro Asn Phe Ala
    130                 135                 140

Leu Ala Lys Val Asp Ala Thr Glu Glu Thr Asp Leu Ala Gln Lys Tyr
145                 150                 155                 160

Asp Val Gln Gly Phe Pro Thr Ile Leu Phe Phe Ile Asp Gly Val Pro
                165                 170                 175

Arg Gly Tyr Asn Gly Ala Arg Thr Lys Glu Ala Ile Val Asp Trp Ile
            180                 185                 190

Asn Lys Lys Leu Gly Pro Ala Val Gln Asn Val Thr Ser Val Asp Glu
        195                 200                 205

Ala Gln Ser Ile Leu Thr Gly Asp Asp Lys Ala Val Leu Ala Phe Leu
    210                 215                 220

Asp Thr Leu Ser Gly Ala His Ser Asp Glu Leu Ala Ala Ala Ser Arg
225                 230                 235                 240

Leu Glu Asp Ser Ile Asn Phe Tyr Gln Thr Ser Thr Pro Asp Val Ala
                245                 250                 255

Lys Leu Phe His Ile Asp Ala Ala Ala Lys Arg Pro Ser Val Val Leu
            260                 265                 270

Leu Lys Lys Glu Glu Glu Lys Leu Thr Phe Tyr Asp Gly Glu Phe Lys
        275                 280                 285

Ala Ser Ala Ile Ala Gly Phe Val Ser Ala Asn Lys Leu Pro Leu Val
    290                 295                 300

Thr Thr Leu Thr Gln Glu Thr Ser Pro Ser Ile Phe Gly Asn Pro Ile
305                 310                 315                 320

Lys Lys Gln Ile Leu Leu Phe Ala Val Ala Ser Glu Ser Thr Lys Phe
                325                 330                 335

Leu Pro Ile Phe Lys Glu Ala Ala Lys Pro Phe Lys Gly Lys Leu Leu
            340                 345                 350

Phe Val Phe Val Glu Arg Asp Ser Glu Glu Val Gly Glu Pro Val Ala
        355                 360                 365

Asp Tyr Phe Gly Ile Thr Gly Gln Glu Thr Thr Val Leu Ala Tyr Thr
    370                 375                 380

Gly Asn Glu Asp Ala Arg Lys Phe Phe Leu Asp Gly Glu Val Ser Leu
385                 390                 395                 400

Glu Ala Ile Lys Asp Phe Ala Glu Gly Phe Leu Glu Asp Lys Leu Thr
                405                 410                 415

Pro Phe Tyr Lys Ser Glu Pro Val Pro Glu Ser Asn Asp Gly Asp Val
            420                 425                 430

Lys Ile Val Val Gly Lys Asn Leu Asp Leu Ile Val Phe Asp Glu Thr
        435                 440                 445
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Lys Asp Val Leu Leu Glu Ile Tyr Ala Pro Trp Cys Gly His Cys Gln
    450                 455                 460

Ser Leu Glu Pro Thr Tyr Asn Asn Leu Ala Lys His Leu Arg Ser Val
465                 470                 475                 480

Asp Ser Leu Val Val Ala Lys Met Asp Gly Thr Thr Asn Glu His Pro
                485                 490                 495

Arg Ala Lys Ser Asp Gly Tyr Pro Thr Ile Leu Phe Tyr Pro Ala Gly
            500                 505                 510

Lys Lys Ser Phe Glu Pro Ile Thr Phe Glu Gly Glu Arg Thr Val Val
        515                 520                 525

Asp Leu Tyr Lys Phe Ile Lys Lys His Ala Ser Ile Pro Phe Lys Leu
    530                 535                 540

Lys Arg Gln Glu Ser Arg Thr Glu Ser Thr Arg Ala Glu Gly Val Lys
545                 550                 555                 560

Ser Ser Gly Thr Asn Ser Lys Asp Glu Leu
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<400> 11

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gagcatccca gggctaagcc tgatggattc cccactcttc tcttcttccc ggcaggaaac 480
aagagttttg accctattac tgttgataca gatcgtacag tggtagcctt ctacaagttc 540
ctcaagaaac atgcatcaat cccattcaag ctccagaaac caacctcaac ttctgaatcc 600
gattccaagg ggagctctga tgccaaagag agccagagta gtgatgtgaa ggacgaatta 660
tgaggagtta agtgatatat ttttatttat agaaactatg attcagacag atgatgacat 720
agtgactgag gtaaaaaata ccaagttact tctcacccct ggtcaataaa aaacaaacgg 780
ggagtggggg gagagagaca aatgcgaggc acacatgtat tactattaac ttcaatttgt 840
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<210> 12
<211> 220
<212> PRT
<213> Zea mays

<400> 12

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Ala Arg Val Glu Met Asp Asn Glu Asp Val Gly Lys Pro Val Ser Glu
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Tyr Phe Gly Ile Ser Gly Asn Ala Pro Lys Val Leu Gly Tyr Thr Gly
             20                  25                  30

Asn Asp Asp Gly Lys Lys Phe Val Leu Asp Gly Glu Val Thr Thr Asp
         35                  40                  45
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Lys Ile Lys Ala Phe Gly Glu Asp Phe Val Glu Asp Lys Leu Lys Pro
 50                  55                  60

Phe Tyr Lys Ser Asp Pro Val Pro Glu Ser Asn Asp Gly Asp Val Lys
 65                  70                  75                  80

Ile Val Val Gly Asn Asn Phe Asp Glu Ile Val Leu Asp Glu Ser Lys
                 85                  90                  95

Asp Val Leu Leu Glu Ile Tyr Ala Pro Trp Cys Gly His Cys Gln Ser
            100                 105                 110

Leu Glu Pro Ile Tyr Asn Lys Leu Ala Lys His Leu Arg Asn Ile Asp
        115                 120                 125

Ser Leu Val Ile Ala Lys Met Asp Gly Thr Thr Asn Glu His Pro Arg
    130                 135                 140

Ala Lys Pro Asp Gly Phe Pro Thr Leu Leu Phe Phe Pro Ala Gly Asn
145                 150                 155                 160

Lys Ser Phe Asp Pro Ile Thr Val Asp Thr Asp Arg Thr Val Val Ala
                165                 170                 175

Phe Tyr Lys Phe Leu Lys Lys His Ala Ser Ile Pro Phe Lys Leu Gln
            180                 185                 190

Lys Pro Thr Ser Thr Ser Glu Ser Asp Ser Lys Gly Ser Ser Asp Ala
        195                 200                 205

Lys Glu Ser Gln Ser Ser Asp Val Lys Asp Glu Leu
    210                 215                 220
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<210> 13
<211> 1126
<212> DNA
<213> Glycine max

<400> 13

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ttgaaactct tcaagatgtt gcaaaaacat tcaagtcaaa gataatgttt atatatgtgg  180
atattaatga tgagaacctt gcaaagccct tcttaacatt gtttggtctt gaagaatcaa  240
aaaatactgt ggtcgccgca tttgataatg caatgagctc aaaatatttg ttggagacaa  300
aaccaacaca aagcaatatt gaagagttct gcaataacct tgtgcaaggg tctttgtcac  360
cttacttcaa gtcacagcca attccagata atacagaatc aagtgtccat gttattgtcg  420
ggaaaacatt tgatgatgaa atcttgagca gcgagaagga tgtgctcttg gaggtattta  480
cgccttggtg catcaactgt gaggccacta gcaagcaagt agagaagttg gcaaagcact  540
acaaaggatc aagtaatcta atatttgcaa ggatagatgc ttcagcaaat gaacatccaa  600
aactgcaagt gaatgactac cccacgcttc tactttacag agcagacgat aaggcaaatc  660
cgatcaaact ttccacaaaa tctagtttga aagagttggc tgcatccatt aacaaatatg  720
taaaagtcaa gaatcaagtc gtcaaagatg agttatagaa catatcaaaa agttttggga  780
gaaaaacact taaccatgaa gaaagtaaaa cattatggaa agaaacaaat attatgttgt  840
cttgcgtaag cattttctaa tttttattaa cctttcccct gccattttat ggtggtccaa  900
atatgagtta gtctattatt atttgagtta gcttactgct aaattgcgaa agctagtcaa  960
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acatatcaaa ctcaagcttt tataattcga aaaaaaaaaa aaaaaa                 1126
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39

<210> 14
<211> 251
<212> PRT
<213> Glycine max

<400> 14

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Thr Ser Lys Phe Pro Leu Val Thr Lys Leu Thr Glu Met Asn Ser Ile
  1               5                  10                  15

Arg Val Tyr Ser Ser Pro Ile Lys Leu Gln Val Leu Val Phe Ala Asn
             20                  25                  30

Ile Asp Asp Phe Lys Asn Leu Leu Glu Thr Leu Gln Asp Val Ala Lys
         35                  40                  45

Thr Phe Lys Ser Lys Ile Met Phe Ile Tyr Val Asp Ile Asn Asp Glu
     50                  55                  60

Asn Leu Ala Lys Pro Phe Leu Thr Leu Phe Gly Leu Glu Glu Ser Lys
 65                  70                  75                  80

Asn Thr Val Val Ala Ala Phe Asp Asn Ala Met Ser Ser Lys Tyr Leu
                 85                  90                  95

Leu Glu Thr Lys Pro Thr Gln Ser Asn Ile Glu Glu Phe Cys Asn Asn
            100                 105                 110

Leu Val Gln Gly Ser Leu Ser Pro Tyr Phe Lys Ser Gln Pro Ile Pro
        115                 120                 125

Asp Asn Thr Glu Ser Ser Val His Val Ile Val Gly Lys Thr Phe Asp
    130                 135                 140

Asp Glu Ile Leu Ser Ser Glu Lys Asp Val Leu Leu Glu Val Phe Thr
145                 150                 155                 160

Pro Trp Cys Ile Asn Cys Glu Ala Thr Ser Lys Gln Val Glu Lys Leu
                165                 170                 175

Ala Lys His Tyr Lys Gly Ser Ser Asn Leu Ile Phe Ala Arg Ile Asp
            180                 185                 190

Ala Ser Ala Asn Glu His Pro Lys Leu Gln Val Asn Asp Tyr Pro Thr
        195                 200                 205

Leu Leu Leu Tyr Arg Ala Asp Asp Lys Ala Asn Pro Ile Lys Leu Ser
    210                 215                 220

Thr Lys Ser Ser Leu Lys Glu Leu Ala Ala Ser Ile Asn Lys Tyr Val
225                 230                 235                 240

Lys Val Lys Asn Gln Val Val Lys Asp Glu Leu
                245                 250
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<210> 15
<211> 1943
<212> DNA
<213> Glycine max

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ggcgacttcg aggaggaccc ggaggcgtac aagcagcccg aggtggacga gaaggacgtc 240
gtcattttga aggagaagaa cttcaccgac accgtcaaga gcaaccgctt cgtcatggtc 300
gagttctacg cgccctggtg cggccactgc caggccctcg cgccggagta cgccgccgcc 360
gcgacggaac tcaagggcga agacgtaatt ttggcaaagg tggatgccac cgaggagaat 420
gaattggcgc agcagtacga tgttcagggt ttccccactg tccacttctt cgttgatggc 480
attcacaagc cttataatgg ccaaaggacc aaagatgcta tagtgacgtg gataggaaag 540
aagatcggac ctggcatata caacttgact acagtggagg atgctcaacg catcttgacc 600
aacgaaacta aagttgtttt gggcttcctc aactctttag ttggtcctga gagtgaggag 660
cttgctgctg cttcaagact tgaggatgat gtcaattttt atcaaactgt ggatcctgat 720
gtggcaaagc ttttccatat tgacccagat gttaagcgcc cagctttgat cctcgtcaag 780
aaagaggagg aaaaacttaa ccactttgat ggcaaatttg agaagtcgga aatagcagac 840
tttgtcttct ccaacaagct tcctttggta acaattttta caagagaaag tgccccatca 900
gtcttcgaaa atccaatcaa gaaacagttg ttgctgtttg caacttcaaa tgattcagag 960
aagttgatcc ctgcatttaa agaagctgca aaatctttca agggaaagtt gatctttgta 1020
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aaacatcttc gtaatattga gtctcttgta atagccaaga tggatggaac aacaaatgag 1440
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aagtgatata tttttattta ttgaaactga ttcagacaga tgatgacatg gtgactgagg 1740
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aggagacaaa tgcgaggcac atatgtatta ctattaactt aaatttttac aactgggcat 1860
tttagaattt tgggttgaga cttcaataaa ttccccctta aattttaaaa aaaaaaaaaa 1920
aaaaaaaaac tcgagactag ttc 1943

<210> 16
<211> 551
<212> PRT
<213> Glycine max

<400> 16
Met Arg Ile Leu Val Val Leu Ser Leu Ala Thr Leu Leu Leu Phe Ser
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Ser Leu Phe Leu Thr Leu Cys Asp Asp Leu Thr Asp Asp Glu Asp Leu
20 25 30

Gly Phe Leu Asp Glu Pro Ser Ala Ala Pro Glu His Gly His Tyr His
35 40 45

Asp Asp Asp Ala Asn Phe Gly Asp Phe Glu Glu Asp Pro Glu Ala Tyr
50 55 60

Lys Gln Pro Glu Val Asp Glu Lys Asp Val Val Ile Leu Lys Glu Lys
65 70 75 80

Asn Phe Thr Asp Thr Val Lys Ser Asn Arg Phe Val Met Val Glu Phe
85 90 95

41

Tyr Ala Pro Trp Cys Gly His Cys Gln Ala Leu Ala Pro Glu Tyr Ala
100 105 110

Ala Ala Ala Thr Glu Leu Lys Gly Glu Asp Val Ile Leu Ala Lys Val
115 120 125

Asp Ala Thr Glu Glu Asn Glu Leu Ala Gln Gln Tyr Asp Val Gln Gly
130 135 140

Phe Pro Thr Val His Phe Phe Val Asp Gly Ile His Lys Pro Tyr Asn
145 150 155 160

Gly Gln Arg Thr Lys Asp Ala Ile Val Thr Trp Ile Gly Lys Lys Ile
165 170 175

Gly Pro Gly Ile Tyr Asn Leu Thr Thr Val Glu Asp Ala Gln Arg Ile
180 185 190

Leu Thr Asn Glu Thr Lys Val Val Leu Gly Phe Leu Asn Ser Leu Val
195 200 205

Gly Pro Glu Ser Glu Glu Leu Ala Ala Ala Ser Arg Leu Glu Asp Asp
210 215 220

Val Asn Phe Tyr Gln Thr Val Asp Pro Asp Val Ala Lys Leu Phe His
225 230 235 240

Ile Asp Pro Asp Val Lys Arg Pro Ala Leu Ile Leu Val Lys Lys Glu
245 250 255

Glu Glu Lys Leu Asn His Phe Asp Gly Lys Phe Glu Lys Ser Glu Ile
260 265 270

Ala Asp Phe Val Phe Ser Asn Lys Leu Pro Leu Val Thr Ile Phe Thr
275 280 285

Arg Glu Ser Ala Pro Ser Val Phe Glu Asn Pro Ile Lys Lys Gln Leu
290 295 300

Leu Leu Phe Ala Thr Ser Asn Asp Ser Glu Lys Leu Ile Pro Ala Phe
305 310 315 320

Lys Glu Ala Ala Lys Ser Phe Lys Gly Lys Leu Ile Phe Val Tyr Val
325 330 335

Glu Met Asp Asn Glu Asp Val Gly Lys Pro Val Ser Glu Tyr Phe Gly
340 345 350

Ile Ser Gly Asn Ala Pro Lys Val Leu Gly Tyr Thr Gly Asn Asp Asp
355 360 365

Gly Lys Lys Phe Val Leu Asp Gly Glu Val Thr Ala Asp Lys Ile Lys
370 375 380

Ala Phe Gly Asp Asp Phe Leu Glu Asp Lys Leu Lys Pro Phe Tyr Lys
385 390 395 400

Ser Asp Pro Val Pro Glu Ser Asn Asp Gly Asp Val Lys Ile Val Val
405 410 415

42

Gly Asn Asn Phe Asp Glu Ile Val Leu Asp Glu Ser Lys Asp Val Leu
420 425 430

Leu Glu Ile Tyr Ala Pro Trp Cys Gly His Cys Gln Ala Leu Glu Pro
435 440 445

Ile Tyr Asp Lys Leu Ala Lys His Leu Arg Asn Ile Glu Ser Leu Val
450 455 460

Ile Ala Lys Met Asp Gly Thr Thr Asn Glu His Pro Arg Ala Lys Pro
465 470 475 480

Asp Gly Phe Pro Thr Leu Leu Phe Phe Pro Ala Gly Asn Lys Ser Phe
485 490 495

Asp Pro Ile Thr Val Asp Thr Asp Arg Thr Val Val Ala Phe Tyr Lys
500 505 510

Phe Leu Lys Lys His Ala Ser Ile Pro Phe Lys Leu Gln Lys Pro Thr
515 520 525

Ser Thr Ser Asp Ala Lys Gly Ser Ser Asp Ala Lys Glu Ser Gln Ser
530 535 540

Ser Asp Val Lys Asp Glu Leu
545 550

<210> 17
<211> 1565
<212> DNA
<213> Triticum aestivum

<400> 17
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gccttcgcga agctcgacgg ggagcgctac cccaaggcgg ctgccgccgt cggggtcaag 180
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cagtctaagg attcagctga ggagttcctc aaaaaggaca tgacctttgt tattgggcta 360
ttcaagaatt ttgagggagc agaccatgaa gaatttgtga aggcagcaac cacagacaac 420
gaggtacagt ttgtagaaac cagtgataca cgtgttgcca aagttctatt tccaggtatt 480
acgtccgagg agaaatttgt gggcctcgtt aaaagcgagc cagagaagtt tgaaaagttc 540
gatgggaaat ttgaagaaac ggaaattctg cggtttgtgg agctcaacaa gtttcctcta 600
attactgtat tcactgagct caattccggt aaagtatatt caagccctat taagctacag 660
gtcttcacct ttgcagaggc ttatgatttt gaagatctgg aatctatggt tgaagaaata 720
gccagagcat tcaagacaaa gataatgttt atatatgttg acactgctga agaaaacctt 780
gcaaaaccat tcctcactct ttatggcctt gaatcagaaa aaaagcctac tgttacagca 840
tttgatacaa gcaatggagc caagtatctg atggaggcag atatcaatgc aaacaacctg 900
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agtgtcaagg acatggccaa actgatcaag gagaagctgc aaataccaga cgtggagaca 1320
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agtgaaggaa aaattgcagc atgtttgcgt gttttgcccc aacctgatca cagagctcag 1440
ctttattcgc gtgctgtgtt aagttgacta aagtcaatgg tatataatat aggtacctaa 1500
atcaaagagg cttcggcccc taaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1560
aaaaa 1565

43

<210> 18
<211> 451
<212> PRT
<213> Triticum aestivum

<400> 18

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Ala Arg Asp His Ala Glu Leu Leu Leu Leu Gly Tyr Ala Pro Trp Cys
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Glu Arg Ser Ala Gln Leu Met Pro Arg Phe Ala Glu Ala Ala Ala Ala
            20                  25                  30

Leu Arg Ala Met Gly Ser Ala Val Ala Phe Ala Lys Leu Asp Gly Glu
        35                  40                  45

Arg Tyr Pro Lys Ala Ala Ala Ala Val Gly Val Lys Gly Phe Pro Thr
    50                  55                  60

Val Leu Leu Phe Val Asn Gly Thr Glu His Ala Tyr His Gly Leu His
65                  70                  75                  80

Thr Lys Asp Ala Ile Val Thr Trp Val Arg Lys Lys Thr Gly Glu Pro
                85                  90                  95

Ile Ile Arg Leu Gln Ser Lys Asp Ser Ala Glu Glu Phe Leu Lys Lys
            100                 105                 110

Asp Met Thr Phe Val Ile Gly Leu Phe Lys Asn Phe Glu Gly Ala Asp
        115                 120                 125

His Glu Glu Phe Val Lys Ala Ala Thr Thr Asp Asn Glu Val Gln Phe
    130                 135                 140

Val Glu Thr Ser Asp Thr Arg Val Ala Lys Val Leu Phe Pro Gly Ile
145                 150                 155                 160

Thr Ser Glu Glu Lys Phe Val Gly Leu Val Lys Ser Glu Pro Glu Lys
                165                 170                 175

Phe Glu Lys Phe Asp Gly Lys Phe Glu Glu Thr Glu Ile Leu Arg Phe
            180                 185                 190

Val Glu Leu Asn Lys Phe Pro Leu Ile Thr Val Phe Thr Glu Leu Asn
        195                 200                 205

Ser Gly Lys Val Tyr Ser Ser Pro Ile Lys Leu Gln Val Phe Thr Phe
    210                 215                 220

Ala Glu Ala Tyr Asp Phe Glu Asp Leu Glu Ser Met Val Glu Glu Ile
225                 230                 235                 240

Ala Arg Ala Phe Lys Thr Lys Ile Met Phe Ile Tyr Val Asp Thr Ala
                245                 250                 255

Glu Glu Asn Leu Ala Lys Pro Phe Leu Thr Leu Tyr Gly Leu Glu Ser
            260                 265                 270

Glu Lys Lys Pro Thr Val Thr Ala Phe Asp Thr Ser Asn Gly Ala Lys
        275                 280                 285
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Tyr Leu Met Glu Ala Asp Ile Asn Ala Asn Asn Leu Arg Glu Phe Cys
290 295 300

Leu Ser Leu Leu Asp Gly Thr Leu Pro Pro Tyr His Lys Ser Glu Pro
305 310 315 320

Leu Pro Gln Glu Lys Gly Leu Ile Glu Lys Val Val Gly Arg Thr Phe
325 330 335

Asp Ser Ser Val Leu Glu Ser His Gln Asn Val Phe Leu Glu Val His
340 345 350

Thr Pro Trp Cys Val Asp Cys Glu Ala Ile Ser Lys Asn Val Glu Lys
355 360 365

Leu Ala Lys His Phe Ser Gly Ser Asp Asn Leu Lys Phe Ala Arg Ile
370 375 380

Asp Ala Ser Val Asn Glu His Pro Lys Leu Lys Val Asn Asn Ser Pro
385 390 395 400

Thr Leu Phe Leu Tyr Leu Ala Glu Asp Lys Asn Asn Pro Ile Lys Leu
405 410 415

Ser Lys Lys Ser Ser Val Lys Asp Met Ala Lys Leu Ile Lys Glu Lys
420 425 430

Leu Gln Ile Pro Asp Val Glu Thr Val Ala Ala Pro Asp Asn Val Lys
435 440 445

Asp Glu Leu
450

<210> 19
<211> 1078
<212> DNA
<213> Triticum aestivum

<400> 19
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ttttgctgtt tgctgttgcg aaggagtcct caaaatttct gcccatcatt aaggaaacag 180
caaaatcatt caaggggaag cttttatttg tctttgtgga gcgtgacaat gaggaagttg 240
gcgaacctgt tgccaattac tttggaatta ctggacaaga gaccacggtt cttgcttaca 300
ctgggaatga agacgctaag aagttcttct tcaccggtga aatatcactg gacaccatta 360
aggaatttgc tcaagatttc atggaggaca agctcacacc atcctacaag tctgacccag 420
tacctgaatc caatgatgag gacgtcaaag ttgttgttgg caagagtcta gatcaaatag 480
ttctggatga gtcaaaggat gtccttttgg agatatatgc gccatggtgt ggccattgtc 540
agtcactgga gcctatctac aacaagctgg ccaagtacct ccgtggcatc gactcccttg 600
taatagccaa aatggacggc acaaacaatg agcatcctcg tgccaagccc gatgggttcc 660
ccacgatact cttctaccca gctgggaaga aaagctttga gcctataact ttcgaggggg 720
gccggacagt ggtagagatg tacaagttcc tcaagaagca tgccgccatc cctttcaagc 780
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tcaaccaacc ttggctgctg caagtgtatg ctgacaacac aaatattaac tgctgtagaa 1020
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45

<210> 20
<211> 294
<212> PRT
<213> Triticum aestivum

<400> 20

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Thr Arg Phe Arg Ala Ser Ala Ile Ala Lys Phe Val Ser Ala Asn Lys
  1               5                  10                  15

Ile Pro Leu Ile Thr Thr Leu Thr Gln Glu Thr Ala Pro Ala Ile Phe
             20                  25                  30

Asp Asn Pro Ile Lys Lys Gln Ile Leu Leu Phe Ala Val Ala Lys Glu
         35                  40                  45

Ser Ser Lys Phe Leu Pro Ile Ile Lys Glu Thr Ala Lys Ser Phe Lys
     50                  55                  60

Gly Lys Leu Leu Phe Val Phe Val Glu Arg Asp Asn Glu Glu Val Gly
 65                  70                  75                  80

Glu Pro Val Ala Asn Tyr Phe Gly Ile Thr Gly Gln Glu Thr Thr Val
                 85                  90                  95

Leu Ala Tyr Thr Gly Asn Glu Asp Ala Lys Lys Phe Phe Phe Thr Gly
            100                 105                 110

Glu Ile Ser Leu Asp Thr Ile Lys Glu Phe Ala Gln Asp Phe Met Glu
        115                 120                 125

Asp Lys Leu Thr Pro Ser Tyr Lys Ser Asp Pro Val Pro Glu Ser Asn
    130                 135                 140

Asp Glu Asp Val Lys Val Val Val Gly Lys Ser Leu Asp Gln Ile Val
145                 150                 155                 160

Leu Asp Glu Ser Lys Asp Val Leu Leu Glu Ile Tyr Ala Pro Trp Cys
                165                 170                 175

Gly His Cys Gln Ser Leu Glu Pro Ile Tyr Asn Lys Leu Ala Lys Tyr
            180                 185                 190

Leu Arg Gly Ile Asp Ser Leu Val Ile Ala Lys Met Asp Gly Thr Asn
        195                 200                 205

Asn Glu His Pro Arg Ala Lys Pro Asp Gly Phe Pro Thr Ile Leu Phe
    210                 215                 220

Tyr Pro Ala Gly Lys Lys Ser Phe Glu Pro Ile Thr Phe Glu Gly Gly
225                 230                 235                 240

Arg Thr Val Val Glu Met Tyr Lys Phe Leu Lys Lys His Ala Ala Ile
                245                 250                 255

Pro Phe Lys Leu Lys Arg Pro Asp Ser Ser Ala Ala Arg Thr Asp Ser
            260                 265                 270

Ala Glu Gly Pro Gly Ser Thr Thr Asp Ser Glu Lys Ser Ser Gly Ser
        275                 280                 285
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Asn Pro Lys Asp Glu Leu
290

47